

# Claims

5 1. Method of controlling quality of service of a CDMA-based system, especially of a CDMA-based telecommunication network, transmitting a plurality of different services between the system and a user equipment by using at least one data channel (DPDCH) with the services multiplexed and rate  
10 matching technique applied and an associated control channel, comprising (DPCCH) the step of:

deriving for the services to be transmitted and for the control channel default quality requirements necessary to achieve desired quality of services,

15 based on the default quality requirements determining of a plurality of initial parameters representing transmitting properties concerning the quality of service,

dynamically adjusting each of said initial parameters in dependence of quality estimates (BER/BLER) performed during  
20 data transmission on each of said services.

2. Method of claim 1, wherein the parameters representing transmitting properties concerning the quality of service comprise a static rate matching factor (SRF) for each  
25 service, a signal to interference ratio (SIR) for the control channel (DPCCH) and a power-offset (G) between the control channel (DPCCH) and the at least one data channel (DPDCH).

3. Method of claim 1, wherein the step of deriving default  
30 quality requirements comprises the

choosing of an Energy per Bit per Noise density ratio ( $E_b/N_0$ ) and a Data Rate ( $R_b$ ) for each service to be transmitted and a Energy per Symbol per Noise density ratio ( $(E_s/N_0)_{ctrl}$ ) for the control channel (DPCCH) from a look up  
35 table (2) in dependence on environments measurements (3) and on the combination of the services to be transmitted.

4. Method of claim 3, wherein the environments measurements (3) includes the speed of the user equipment, interference situation and/or propagation conditions.

5 5. Method of claim 1, wherein the step of determining the initial parameters comprises the determining of a static rate matching factor (SRF) for each service, a signal to interference ratio (SIR) for the control channel (DPCCH) and a power-offset between (G) the control channel (DPCCH) and  
10 the at least one data channel (DPDCH) is performed by using conventional calculating methods.

15 6. Method of claim 5, wherein the step of determining the initial parameters is performed by using the methods according to the European patent applications 99 305 516.9 and/or 99 232 07.6.

20 7. Method of claim 1, comprising the step of handing the initial and/or adjusted parameters to a physical layer within pre-definable time intervals.

25 8. Method of claim 1, wherein the step of dynamically adjusting is performed by using actual bit-error-rates (BER) of each transport channel (TrCH) after decoding and/or block-error-rates (BLER) related to a single service, respectively.

30 9. Method of claim 1, wherein the step of dynamically adjusting comprises the recalculation of a static rate matching factor (SRF) for each service in respond to a comparison of the quality estimates (BER/BLER) with pre-definable thresholds.

35 10. Method of claim 1, wherein the step of dynamically adjusting comprises the adjustment of the signal to interference ratio (SIR) for the control channel (DPCCH) by use of an outer loop power control in respond to a comparison of the quality estimates (BER/BLER) with pre-definable

thresholds.

11. Method of claims 10, wherein the step of dynamically  
adjusting comprises the recalculation of a power offset (G)  
5 between the control channel (DPCCH) and the at least one data  
channel (DPDCH) in response to a comparison of the signal to  
interference ratio (SIR) with a further pre-definable  
threshold.

10 12. Method of claim 1, wherein the default quality  
requirements are updated by means of monitoring actual Energy  
per Bit per Noise density ratios ( $E_b/N_0$ ), Data Rates ( $R_p$ ) and  
Energy per Symbol per Noise density ratios ( $(E_s/N_0)_{ctrl}$ ) with  
regard to environments measures and/or user behavior related  
15 thereto.

13. Method of claim 1, wherein the method is performed within  
a UMTS-System.

20 14. Method of claim 1, wherein the at least one data channel  
and the control channel is provided by a dedicated physical  
data channel (DPDCH) and a dedicated physical control channel  
(DPCCH), respectively.

25 15. CDMA-based system, especially a mobile telecommunication  
system, adapted for transmitting a plurality of different  
services between the system and a user equipment by using at  
least one data channel (DPDCH) with the services multiplexed  
and rate matching technique applied and an associated control  
30 channel (DPCCH), comprising

means for providing default quality requirements  
necessary to achieve a desired quality of service with regard  
to the services to be transmitted and to the control channel,

means for performing quality estimates during data  
35 transmission on each of said services, and

means for determining parameters based either on the  
default quality requirements or on the quality estimates

representing a static rate matching factor (SRF) for each service, a signal to interference ratio (SIR) for the control channel (DPCCH) and a power-offset (G) between the control channel (DPCCH) and the at least one data channel (DPDCH).

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16. CDMA-based system of claim 15, characterized by means for handing the parameters to a physical layer within pre-definable time intervals.

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17. CDMA-based system of claim 15, wherein the means for performing quality estimates uses actual bit-error-rates (BER) of each transport channel (TrCH) after decoding and/or block-error-rates (BLER) related to a single service, respectively.

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18. CDMA-based system of claim 17, wherein the means for determining comprises means for comparing the quality estimates (BER/BLER) with at least one pre-definable threshold for recalculation of the static rate matching factor (SRF) for the adjustment of the signal to interference ratio (SIR) and for comparing the signal to interference ratio (SIR) with a further pre-definable threshold for the recalculation of a power offset (G).

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19. CDMA-based system of claim 18, wherein the means for providing default requirements comprises means for updating said default requirements by using means for monitoring actual Energy per Bit per Noise density ratios ( $E_b/N_0$ ), Data Rates ( $R_b$ ) and Energy per Symbol per Noise density ratios ( $(E_s/N_0)_{ctrl}$ ) and/or means for measuring actual environments and/or user behavior.

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